HUMAN CELL LINE FOR STUDIES ON SIGNALING AND ENDOCRINE CANCER

SUMMARY

The National Institute of Child and Human Development seeks interested parties to further co-developa cell line with mutations in PRKAR1A, associated with tumor formation, for use a diagnostic or research tool.

REFERENCE NUMBER

E-267-2012

PRODUCT TYPE

- Research Materials

KEYWORDS

- PRKAR1A
- cAMP signaling
- RIalpha
- PKA

COLLABORATION OPPORTUNITY

This invention is available for licensing.

DESCRIPTION OF TECHNOLOGY

The first known immortalized cell line with a naturally-occurring inactivating mutation in *PRKAR1A*, the regulatory subunit type 1A (R1alpha) of protein kinase A (PKA), which is associated with tumor formation.

PKA isozyme balance is critical for the control of cAMP signaling and related cell cycle and proliferation changes. Aberrant cAMP signaling has been linked to adrenocortical and other, mostly endocrine, tumors. Inactivating mutations in the *PRKAR1A* gene are a known cause of Carney Complex - an autosomal dominant multiple neoplasia syndrome associated with skin, heart, and other myxomas and a variety of endocrine tumors.

POTENTIAL COMMERCIAL APPLICATIONS

- Studies on multiple tumor formation associated with Carney Complex.
- Characterization of cAMP-mediated mechanisms of endocrine tumor formation.
- Studies of a large variety of cAMP-mediated processes in normal physiology and disease.

COMPETITIVE ADVANTAGES

- First known immortalized cell line with a naturally-occurring inactivating mutation in the PRKAR1A gene.

INVENTOR(S)

- Constantine A Stratakis (NICHD)

DEVELOPMENT STAGE

- Discovery (Lead Identification)

PUBLICATIONS

- Nesterova M, et al. [PMID 18056771]

PATENT STATUS

- **U.S. Filed:** Research Tool, patent prosecution not pursued.

THERAPEUTIC AREA

- Cancer/Neoplasm